

Adult, fiber optics and/or mushroom joystick

**Statement of Medical Necessity and Equipment Justification
Seating, Positioning and Mobility Assessment**

DATE/S OF ASSESSMENT: 5/23/00, 7/10/00

PATIENT'S NAME: Laramie West

D.O.B.: 10/29/73 **AGE:** 27 years old

MEDICAL DIAGNOSIS: Muscular Dystrophy

REFERRED FOR: powered mobility evaluation

REFERRED BY: OVR, (Office of Vocational Rehabilitation)

THERAPIST EVALUATING: Karen M. Kangas OTR/L

OTHERS PRESENT: OVR Counselor, Keith Right (USA's Medical), Okey Dokey (PT), Annie Pan (attendant)

Medical Necessity and Justification for Equipment

Identification of Needs/Reason for Referral

Laramie, his therapist, his attendant and his Office of Vocational Rehabilitation counselor, met with me and Keith Right today at USA' s Medical to perform a new powered mobility evaluation. Laramie has outgrown his current seating system, and is concerned that we begin to obtain another one. He has also lost some motor skills with driving with a joystick and is in need of using alternative switch access for driving.

Medical Considerations

Laramie currently reports that he is medically stable. Although he does have a progressive disease (muscular dystrophy) he is not currently coping with any acute disorders. He uses a ventilator with an external nose piece daily. He knows he has lost some use of his hands for driving and will need to consider alternative access for driving.

He works from his home, and is eager to obtain a system with which he can remain as independent as possible. He uses his powered seat functions of tilt, recline, and powered leg elevation and will continue to need them.

Current seating

Laramie is currently seated in an Invacare Action Storm belt driven rear wheel drive powered chair with MKIII (Mark 3) electronics. This system has a TARSYS (tilt and recline system) with it which Laramie utilizes daily. The seating includes a JAY 2 gel seat cushion, and a custom contoured Bead back. He uses a Miller headrest, and has a custom made wide, stretchy trunk support. His ventilator is mounted on the rear of his chair.

Motor Assessment

Laramie has Duchenne's Muscular Dystrophy and the diseases is progressing. He continues to be free of contractures and skin pressure problems. His trunk is somewhat collapsed and to gain head control he must be as far forward as he can get within his seat. He wears his chest strap at all times, and he uses the side of his headrest to assist him in minimal head support almost at all times. He still maintains head control when placed upright, and far enough forward. He also retains some use of his left fingers, although his upper extremity is not able to place his hand. His posture is somewhat asymmetrical, with the left shoulder appearing retracted when in a seated posture. Laramie uses the powered tilt, recline, and elevating legrests to assist him throughout the day. His strength and fatigue can vary, depending on the day, and the time of day. He remains determined to be as independent as possible, and on "good" days can still use his joystick with its customized "holder" to prevent his fingers from slipping off of it. Someone has to place his hand upon it to begin.

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He also reports that he has had bouts of pain in this lower extremities, and that this pain can often be alleviated and the legs are supported in a fully extended posture.

Current Seating and Powered Chair Recommendations

Laramie still requires a **custom contoured back** to accommodate his trunk posture, and scoliosis. This system should also allow him to manage some reclining, to allow him to open up his hip angle for stretching throughout the day.

He continues to need a **custom dynamic (stretching, yet supportive) neoprene wide chest support** to prevent him from falling forward, and losing his head and trunk control. He has done well on his **JAY 2 gel cushion**, so that, too, should be replicated. His head piece has consisted of a **Miller style headrest**, which he is able to use lying within it, and using its outside edge as a “cue” for position when upright. When the seating is changed to accommodate his grown, and larger frame, he may be able to utilize a different headrest, or this style of headrest may be able to altered. He continues to need **powered tilt, recline, and elevating legrests** to allow him to change his posture, alter his weight shifting, support him when driving down inclines, and prevent any further development of contracture or skin/pressure problems. We should not “strip” parts from his current system, as we have all discovered, that as we are fitting Laramie with a “new” system, he often has to rely on the “old” one to continue to function, as he and his body adjust to the “new” one. Also, all users of power should maintain a “back-up” system as a safety and emergency precaution, not to mention, for use when a system requires maintenance.

His **armrests** need to be **full length**, to accommodate a **tray**, which he uses often during the day, to hold items. His **footrests** need to be **angle adjustable** and flip up so that they can support his feet securely, yet be adjusted separately due to his asymmetry, and gotten out of the way when a transfer is required. The tires need to have **flat free inserts** so that maintenance is limited, and the chance of a “blow-out” while Laramie is within the chair is removed. He needs a **padded pelvic positioning belt with a dual pull** system so that he can be securely stable within his seat whether wearing a coat or not.

Attendant control is also critical in assisting Laramie in case of emergency as well as managing his chair when he is placed in bed.

For control of the chair with less hand use, Laramie will require the use of **alternative electronics to include fiber optics** and its interface or an **alternative joystick configuration**. Fiber optic switches will allow him to activate his chair by single switch closures, managed without pressure or strength. The fiber optic switch is about the size of a pencil point, and to activate it Laramie simply has to break the beam of its light, covering the surface of this “pencil point” size. Adaptive Switch Labs, Inc. has developed a fiber optic system which maintains proportional control with 3 switches, covering two are forward, with each separate one being a turn. On the day of delivery, we will have to fit and custom fit this new type of switch access for Laramie. He will need an additional **interface (COM 12)** to manage these electronics on the chair.

The alternative joystick, is a much smaller joystick, a “mini” which can then have a half sphere placed on top of it to hold the hand. It is impossible to know which systems will work for Laramie at this time, and in fact, each day for a while his abilities may vary. With the type of chair we are recommending with its programmable electronics we can configure his system with both types of access, so that he can use either as needed.

Laramie will also need a **remote programmer** which he can instruct either a family member or an attendant to manage as his needs and abilities change. The programmer will allow the chair to be programmed to behave as Laramie needs it to, while safely supporting him. Not only can speed be altered, but so can the chair’s responsiveness in turns, in acceleration and in deceleration. This is critical when the patient’s own control of body is

Adult, fiber optics and/or mushroom joystick limited. The chair's responsiveness can be managed to not cause a jolt or pitch the the patient, fully supporting his ability to be seated and to drive. The programmer also will allow diagnostics with the chair to occur, to determine service needs more readily. It can also be used to correct veering if the motors are every unbalanced.

Current Body Measurements

Seat to shoulder	R: 18", L: 19"
Shoulder to head	13"
Seat to axilla	13"
Shoulder width	20"
Shoulder to elbow	12"
Chest Width	14"
Chest Depth	9 1/2"
Waist	14"
Hip Width	17"
Back of chair to back of knee, L	18"
Back of chair to back of knee, R	18"
Back of chair to front of knee, L	22"
Back of chair to front of knee, R	23"
Top of Knee to bottom of heel, L	19"
Top of knee to bottom of heel, R	19"
Length of foot, R	12"
Knee to knee, Outside	12"
Knee to knee, Inside	6"
Knee height	5"
Approximate Weight	140 lbs.
Approximate Height	5' 7"

Current means of mobility

Laramie is only independently mobile with the use of his powered chair with powered seating functions.

Primary Use of powered chair

Laramie would be using the chair for independent mobility. He would also be able to re-position himself in the chair with the addition of a powered tilt and recline system. This would allow him to change his position himself. It would also allow his attendants to change his position electronically, saving their backs and maintaining their health, too.

How will the chair be transported?

Laramie is currently transported in a van with a lift. Accommodation in his van should be reviewed, however, with van conversion experts, to assure that a proper and safe tie-down system is in place, before the chair is transported with Laramie in it.

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Training and Practice

On the day of delivery an initial lesson will occur. At this time, the chair can be programmed and Laramie will be taught how to manage the chair with its alternative electronics. Since he is an experienced and expert driver, adjustment and placement of controls as well as supportive seating will be the most consuming issues on that day. Additional visits may be required to assist that all parts work adequately for Laramie within his home. Also, after he has used the chair for 3-6 weeks, an additional follow-up visit is recommended to ensure that all is working well, and all of the new parts and programming are utilized and understood.

SPECIFIC EQUIPMENT RECOMMENDATIONS

*****Please note:** *These specific items are the exact items that this person needs. The specifications and brands themselves should **not** be changed. They have been chosen with great care, for durability, ease of use, compatibility, and accessibility and for this individual's own particular needs. (These prices are not exact but, approximate and current as of the time of the report, actual prices will come from the manufacturers, themselves, at the time of purchase.)*

1. Type of chair		approximate cost
Invacare Storm, rear wheeled drive with gearless brushless motors		
w/o electronics		\$16923.+
w/weight limit under 250 lbs.	n/c	
w/short base	n/c	
w/back posts only (doing Contour U back)	n/c	
w/seat width 18"	n/c	
w/seat depth 20"		\$ 595.
w/reclining full length armrests	n/c	
w/genius legs 20" extended		\$ 440.
w/adjustable angle, flip -up footplates		\$ 109.
w/heel loops		\$ 39.
w/1558M4 electronics package		\$ 2527.
w/ Communication module for 1 & 2		\$ 795.
w/easy remote programmer		\$ 316.
w/8" x 1 3/4" semi-pneumatic casters	n/c	
w/shock absorbing fork		\$ 119.
w/6" shock fork	n/c	
w/14" x 3" tires with foam filled inserts		\$ 115.
w/antracite frame color finish	n/c	
w/wheel locks		\$ 45.
From: Invacare, 899 Cleveland St., Elyria, OH 44036-4028; 1-800-333-6900		
Local: USA's Medical		
2. Customized Adaptive Seating Insert		
a. Contour U (Pindot back)		\$?????
b. JAY 2 gel seat cushion, 18" x 20", #2103		\$ 470.
w/additional moisture wicking cover, #C2103A		\$ 75.
c. Miller's Headrest and Mount, #91100		\$ 122.
d. Retractable joystick mount (Quickie brand)		\$ 275.
e. Laptray, if needed		\$?????
f. Bodypoint, dual pull padded pelvic positioning belt		\$ 85.
g. Custom Chest support/neoprene, stretchy		\$?????

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????? Cost determined at time of construction, due to labor and actual materials used.

From: Invacare, 899 Cleveland St., Elyria, OH 44036-4028; 1-800-333-6900

From: JAY Medical Ltd., P. O. Box 18656, Boulder, CO 80308-1656; 800-648-8282

From: Miller's, 2023 Romig Rd., Akron, OH 44320-3819; 1-800-837-4544; FAX: 330-753-9990

From: Sunrise Medical, 7477 East Dry Creek Pkwy, Longmont CO 80503; 800-456-8165

From: Bodypoint Designs, Inc., 704 NE Northlake Way, Seattle, WA 98105; 800-547-5716

Local: USA's Medical

3. Switches & Interfaces

- a. M4 2 Switch Fiber Optic Array Package, #PASL 107M4 \$ 3385.
- b. Attendant control device, # ASL 510 \$ 485.
- c. Remote Attendant Control, #ASL 520BG \$ 825.
- d. Mushroom joystick, #SMJM300-250 \$ 1900.
- e. Lap Tray Driving Platform \$ 515.

From: Adaptive Switch Labs, Inc., 125 Spur 191, Suite C, Spicewood, TX 78669; 800-626-8698

Local: Reading Medical West, K Mart Shopping Plaza, 6A Parkside Ave., Shillington, PA 19607;

Attn: Kevin Wallace, 800-266-6633

4. Delivery Assembling, Instruction, Training

This is another critical piece of this entire chair actually working. This whole chair needs to be assembled and checked, so that each piece fits, and to change a piece if it does not. There is regularly a time delay in the process of ordering and delivery. This system must be safe and fit Laramie adequately. This is the final customization and one of the most important parts of the entire process. Both the therapist and the dealer/vendor need to be involved, working together.

5. Choosing a medical supplier/dealer.

Laramie has chosen USA's Medical as a local dealer, with my support. Their representative, Keith Right has had a great deal of experience in seating and positioning. USA's Medical and Mr. Right have demonstrated to me over the years, that they provide excellent technical and service support as well as remaining certified in installation and service by having completed the various manufacturers' educational courses.

If there are any questions regarding the costs of the chair and the components, please call Mr. Right first, and/or the manufacturers. I have chosen the components based on my expertise as a therapist dealing with seating and positioning of difficult or complicated patients. The choice of items is mine, the delivery and putting together is both the vendor/dealer's and my responsibility. Any cost questions are for the vendor. I choose products as to the patient's needs and the match between the features of the product and the needs of the patient, not their cost, but their value. If there are products which have equal characteristics and a price variation is noticeable, cost effectiveness is always considered.

If there are any questions or concerns regarding this report, please do not hesitate to contact me.

Karen M. Kangas OTR/L
Occupational Therapist ;

Date

Physician

Date